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**Define “Action Research”**

According to Eileen Ferrance from Brown University, "action research is undertaken in a

school setting. It is a reflective process that allows for inquiry and discussion as components of the research. Often, action research is a collaborative activity among colleagues searching for solutions to everyday, real problems experienced in schools, or looking for ways to improve instruction and increase student achievement. The process of action research assists educators in assessing needs, documenting the steps of inquiry, analyzing data, and making informed decisions that can lead to desired outcomes." (Themes in Education. Action. Research, 2000, p.6).

**Defining the Problem**

There is no secret that littering in public places has become a major problem in our modern urban societies. As the global population and major cities grow rapidly, littering grows with mathematical progression, too. And schools are not exceptions. Littering at schools is generally considered unhealthy and visually distasteful. Today, teachers and school administration have already done some preventive steps such as educating students about recycling, reducing, reusing, and going green, etc. The goal is to raise the awareness and focus on how to reduce and stop littering at crowded schools. However, littering in halls, cafeteria, and classrooms is still a big dilemma.

My interest in this topic grew and evolved over many years. I have been in many situations where the topic of littering and the factors that lead to it [littering] was widely argued and discussed from different aspects and points of views. And I always tended to link to those people who considered lack of education, poverty and cultural characteristics to be the main factors of littering in public places. Until… one of my close friends and sociology professor asked me to look at this problem from a different angle and find the answer to the following question: **What if there are some other factors that do not relate to gender, age, social status, religion, level of education, etc., but affect children’s behavior and lead to littering?**

**Is it researchable? Prior Research?** The first question I had to answer was if this topic was researchable? Yes, it is. I did my Internet research to see if there were any studies in this direction. I found out that many different researches have been already done and related to human behavior and environment, and their interaction. In one of such studies, researchers talked about environment-behavior (EB) relationship and effects of the physical environment on human behavior (Cialdini, Robert B., Raymond R. Reno, and Carl A. Kallgren).1 According to the results of another study, the participants were more likely to litter into an already littered environment than into a clean one. This expectation was consistent with the findings of prior research on littering (e.g., Krauss et al., 1978; Reiter & Samuel, 1980).2 In third research study, different types of norm activation were compared to change littering behavior. Moreover, these norm activations were all implemented via persuasive trash can design (Yvonne A. W. De Kort, L. Teddy McCalley, Cees J. H. Midden). In those studies, the researcher talked about environment-behavior (EB) relationship. So I also became interested in studying effects of the physical environment on children’s behavior, especially littering.

**My** **research question** **is**: How different situational variables of physical environment, such as different conditions of a classroom, affect children’s behavior and lead to littering at school?

**What is your proposed intervention?** I want to research and apply on practice the strategy, which proves that organized physical environment in school settings (halls, cafeteria, classrooms, restrooms, etc.) is crucial for reducing littering. If my strategy works and different physical conditions of a classroom affect children’s behavior, then the cleaner the beginning conditions are the less tissues and paper will be thrown on the floor by the end of a school day. In other words, if the classroom is clean and has all accommodations provided, then less or no tissues and paper will be thrown on the floor.

**Method**. To check if my hypothesis is true, I decided to choose a quantitative method and conduct an experiment. The experiment will be done at the local learning center under the same working conditions and according to the regular schedule, except for the varying conditions of the physical environment in two of the classrooms.

**Independent Variable** – three different physical conditions of the experimental classroom #2:

1. garbage can in not accessible place for children
2. a small garbage can
3. big garbage cans, but full of garbage

**Dependent variable** – to measure my intervention, I will make observations of an experimental classroom and check the amount/number of papers/garbage thrown on the floor by the end of a school day.

**Sample**. I chose a SRS, simple random sample. For my experiment, I randomly chose children from two groups, 15 people in each. There are equal number of boys and girls in each group; all students are around 6 years old. Group 1 is the controlled one and group 2 is the experimental one. None of the participants knows that he/she takes part in the experiment that will last for 10 working days. None of them knows the real topic of the experiment and the actual number of observation days. Each group will be following its regular daily routines at the learning center. Note: NO names or any other personal information will be recorded during the observations. I will need to receive a written consent from administration to do this experiment at a learning center.

**Practitioners/Theorists.** Throughout the first school years, young kids need to develop not only physical and academic abilities, but also concentration, eagerness and desire for self-improvement and learning. To reach these, the teacher should provide a safe, nurturing, and enjoyable environment. The learning environment is an important teaching tool. If it is set up with the knowledge of how children learn and develop, it can positively support teaching. For example, the classroom should be organized with age-appropriate learning materials and should provide choices (such as art, library, math, listening, and writing centers). And in our days of digital technologies, the access to computers and other digital devices might enhance and make the learning process more interesting - Dewey’s theory of multiple intelligences.

At the same time, Vygotsky stressed the importance of social interaction for cognitive development. Related to this is the idea of a "Zone of Proximal Development (ZPD)." Some skills, an individual can perform independently. Other skills can be performed if the individual get assistance or modeled the desired skill or behavior. Skills that can be performed with assistance are said to be within an individual's ZPD. The ZPD is the theoretical basis for scaffolding (modeling).

**Pros.** I believe that the strategy of organizing classrooms in the way that students could easily access garbage cans will reduce littering. The same strategy can be also applied in different school settings, such as halls, cafeterias, restrooms, classrooms, etc. Such strategy should be implemented on practice together with ongoing instructional part: spreading the awareness about reducing, reusing, and recycling.

**Cons**. There are some limitations in this research.It did not take into consideration many other variables that could also affect the results of the experiment. Some of such variables are level of awareness/education about recycling and reusing, lack of diversity in the sample, social and economical status of participants, etc. Each of the variables can change and affect the results. Therefore, it puts both, the external and the internal validities of the experiment, under a question: if we can draw the valid conclusions from the data and generalize them to population.

**Footnotes:**

1 In this research, it was found the influence of the interaction between personal and situational variables in environmental behavior. Three different kinds of questions (environmental beliefs, Schwartz’s measure of values, and physical-environmental inhibition level) and 1 item of general environmental concern were presented, along with a 16-item list of environmental actions, to 125 randomly selected undergraduate students. The results permit two main conclusions. First, environmental behavior depends on personal and situational variables in an interactive way. Second, when high conflict level is generated between personal dispositions and situational conditions, the predictive power of attitudes tends to be minimal, whereas in the case of consistency between them it tends to be maximal. The influence of situational variables was found to depend on the environmental action considered. In some cases, situational variables were the most important, whereas in others, commitment or moral obligation played an essential role.

2 In the experiment, subjects were given the opportunity to litter into either a previously clean or a fully littered environment after witnessing a confederate who either littered into the environment or walked through it. By varying the state of the environment (clean vs. littered), we sought to manipulate the perceived descriptive norm for littering in the situation. By manipulating whether the confederate dropped litter into the environment, we sought to affect the extent to which subjects were drawn to focus attention on the state of the environment and, consequently, on the relevant descriptive norm there.

**Reference:**

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